

Application No.: 10/573,088  
Amendment and Response dated January 22, 2009  
Reply to Office Action of September 23, 2008  
Docket No.: 903-184 PCT/US  
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**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the subject application, and please amend the claims as follows:

Claims 1-20 (Canceled)

Claim 21. (Currently amended): A gas sensor comprising at least two one light sources, projection optics and a light-reflecting chamber provided with at least one light entry opening, which gas sensor further comprises a detector that cooperates with the chamber, by means of which detector light from the light source can be detected, wherein the ~~gas sensor comprises~~ at least two light sources, ~~which~~ can each be projected on a light entry opening of the chamber by means of said projection optics, and wherein the cross-sectional area of the chamber gradually decreases from the light entry opening in the direction of the detector.

Claim 22. (Previously presented): The gas sensor of Claim 21, wherein the projection optics project each of the light sources on a reduced scale on a light entry opening of the chamber.

Claim 23. (Previously presented): The gas sensor of Claim 21, wherein the at least two light sources can each be projected on the same light entry opening of the chamber by means of projection optics.

Claim 24. (Previously presented): The gas sensor of Claim 23, wherein the light paths between the light sources and the detector are substantially identical.

Claim 25. (Previously presented): The gas sensor of Claim 21, wherein the projection optics comprises at least one projection mirror.

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Claim 26. (Previously presented): The gas sensor of Claim 25, wherein the projection mirror is faceted.

Claim 27. (Previously presented): The gas sensor of Claim 25, wherein the mirror comprises a number of segments, a first group of which segments is used for projecting the first light source on the light entry opening whilst the second group of segments is used for projecting the second light source on the light entry opening.

Claim 28. (Previously presented): The gas sensor of Claim 27, wherein the two groups of segments have two different focal points.

Claim 29. (Previously presented): The gas sensor of Claim 21, wherein the light sources are disposed on the same side of the chamber.

Claim 30. (Previously presented): The gas sensor of Claim 21, wherein the light sources are spaced apart by a centre distance in the order of the diameter of the light sources.

Claim 31. (Previously presented): The gas sensor of Claim 21, comprising at least three light sources.

Claim 32. (Previously presented): The gas sensor of Claim 21, wherein the chamber is of square cross-section, at least one side of which cross-section has a dimension in the order of the dimension of a light-receiving element of the detector or of the dimension of the projection of the light source.

Claim 33. (Canceled)

Claim 34. (Previously presented): The gas sensor of Claim 21, wherein the length of the chamber is at least three times greater than the cross-sectional dimension of the chamber.

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Claim 35. (Previously presented): The gas sensor of Claim 21, wherein the chamber is channel-shaped, at least one dimension of the chamber being in the order of a dimension of a light-receiving surface of the detector.

Claim 36. (Previously presented): The gas sensor of Claim 21, wherein the chamber is provided with a light exit opening, near which light exit opening the detector is mounted.

Claim 37. (Previously presented): The gas sensor of Claim 21, wherein a wavelength-determining element is disposed between at least one light source and the detector.

Claim 38. (Previously presented): The gas sensor of Claim 37, wherein the wavelength-determining element is a filter.

Claim 39. (Previously presented): The gas sensor of Claim 37, wherein the wavelength-determining element is disposed between the light source and the projection optics.

Claim 40. (Previously presented): The gas sensor of Claim 37, wherein the wavelength-determining element is disposed between the projection optics and the detector.

Claim 41. (New): A gas sensor comprising at least two light sources, projection optics and a light-reflecting chamber provided with at least one light entry opening, which gas sensor further comprises a detector that cooperates with the chamber, by means of which detector light from the light source can be detected, wherein the at least two light sources can each be projected on a light entry opening of the chamber by means of said projection optics, and wherein the projection optics comprises at least one faceted projection mirror.

Claim 42. (New): A gas sensor comprising at least two light sources, projection optics and a light-reflecting chamber provided with at least one light entry opening, which gas sensor further comprises a detector that cooperates with the chamber, by means of which detector light

from the light source can be detected, wherein the at least two light sources can each be projected on a light entry opening of the chamber by means of said projection optics, wherein the projection optics comprises at least one projection mirror comprising a number of segments, a first group of which segments being used for projecting the first light source on the light entry opening whilst the second group of segments is used for projecting the second light source on the light entry opening.

Claim 43. (New): A gas sensor comprising at least two light sources, projection optics and a light-reflecting chamber provided with at least one light entry opening, which gas sensor further comprises a detector that cooperates with the chamber, by means of which detector light from the light source can be detected, wherein the at least two light sources can each be projected on a light entry opening of the chamber by means of said projection optics, wherein the cross-sectional area of the chamber gradually decreases from the light entry opening in the direction of the detector, and wherein the projection optics comprises at least one faceted projection mirror.

Claim 44. (New): A gas sensor comprising at least two light sources, projection optics and a light-reflecting chamber provided with at least one light entry opening, which gas sensor further comprises a detector that cooperates with the chamber, by means of which detector light from the light source can be detected, wherein the at least two light sources can each be projected on a light entry opening of the chamber by means of said projection optics, wherein the cross-sectional area of the chamber gradually decreases from the light entry opening in the direction of the detector, and wherein the projection optics comprises at least one projection mirror comprising a number of segments, a first group of which segments being used for projecting the first light source on the light entry opening whilst the second group of segments is used for projecting the second light source on the light entry opening.